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ABSTRACT

Criticism has been directed at a growing body of literature broadly referred to as ethnoscience, ethnosemantics, folk science, ethnographic semantics, and cognitive anthropology. Criticisms concern methodological and analytic aspects of ethnoscientific procedure, and the directions of ethnosemantic research from a theoretical point of view. The present paper seeks to answer these criticisms and to evaluate the theoretical strengths of ethnosemantics. The focus of ethnosemantic work shifted in the early and mid-sixties, partially as a reflection of renewed interest in theoretical linguistics in language universals, and largely due to the growing number of ethnographies being completed. A number of parallels were discovered in formal classificatory structures, the most striking ones being in the area of lexicon. Detailed descriptions of particular lexical domains led to general semantic structures ignored by the methods of traditional cultural anthropology. One example of empirical research suggestive of the universalist-evolutionary orientation in ethnographic semantics is described, namely Berlin and Kay's work on color classification. (CLK)

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A Universalist-Evolutionary Approach in Ethnographic Semantics*

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Much has been said recently concerning the theoretical limitations -- even sterility--of a growing body of literature broadly referred to as "ethnoscience", "ethnosemantics", "folk science", "ethnographic semantics" and, in some circles, "componential analysis". Yet another name recently suggested by Stephen Tyler is "cognitive anthropology". A major portion of the criticisms arising within cultural anthropology proper has been directed primarily at the methodological or analytic aspects of ethnoscientific procedure, e.g., overtraining of native informants, total reliance, in the extreme case, on verbal eliciting techniques at the expense of participant behavioral observations (a dichotomy suggested as white room vs grass hut ethnography), psychological reality of resulting descriptions, triviality of subject matter amenable to ethnoscientific techniques, etc.

Aside from these methodological apprehensions, most of which are overstatements and essentially straw-men issues, a large number of cultural anthropologists are more seriously worried about the directions of ethnosemantic research from a theoretical point of view. Nowhere is one to find a more detailed--if somewhat picturesque--review of the so-called "new ethnography" that is also theoretically sophisticated than that found in Professor Harris' recent contribution to the foundations of anthropological theory (Harris 1968).

*A slightly modified version of this paper was read as one of two lectures given at the Linguistics Institute, 68th Annual Meetings of the American Anthropological Association, November, 1969, New Orleans, La. The second lecture, "Some Theoretical Implications of Ethnographic Semantics", was presented by Paul Kay and is available as Working Paper No. 24, Language-Behavior Research Laboratory, University of California, Berkeley.

The major goals that Paul Kay and I hope to pursue this afternoon represent, in small part an answer to some of these somewhat justifiable criticisms. On a larger and more serious scale, both our papers represent our honest evaluations of the theoretical strengths of ethnosemantic study as seen up to the present time and present, in outline form, our best guesses as to the direction of this sub-field of anthropology in the decade before us.

Ethnoscientific studies, growing out of the late 50s and led by such linguistic anthropologists as Floyd Lounsbury, Ward Goodenough, Harold Conklin and Charles Frake, to mention a few, were rightfully enough concerned with a kind of systematic ethnographic description motivated by a theorty of culture as seen as a set of ideational rules for appropriate behavior. Given the requirement that an adequate ethnographic description should specify what one must know in order to act appropriately in specified cultural contexts, it logically followed that an almost exclusively relativistic approach--an emic one--should be the prevalent view. Along with this renewed interest in culture as a set of rules for behavior one could also discern an unstated sistrust of the broad comparative studies popular in the prior decade--comparative studies which required the use of cross-cultural data taken, many times, out of context and often of questionable reliability.

Tacitly, the new cognitive anthropologists reiterated the Boasian dictum: describe now--compare later.

It would be an overstatement, if not a totally false one, to suggest that this descriptivist-relativist view represented a total lack of interest in the comparative work so characteristic of much of the most exciting research of cultural anthropology. On the contrary: the strictly emic view always included the broader goal of discovering universal laws characteristic of Culture as a pan-human phenomenon. The caution of the times as reflected in the major concern for emic description could only be seen as a realistic

recognition of the painful truth that problems of general semantic importance had not yet been sufficiently studied to allow meaningful general statements to be made.

Towards the early and mid-sixties, the focus of ethnosemantic work, especially that centered around the study of native systems of classification, began to shift a bit. The shift was, in part, a reflection of the general change of focus in theoretical linguistics proper as marked by the renewed interest in universal grammar and the search for formal and substantive semantic universals. But more than this, the shift of focus in ethnosemantic work could well be attributed to the compilation of a growing body of data as a result of the concerted efforts of numerous ethnographers. As more and more studies were carried out in the young but nonetheless explicit ethnoscientific tradition, a number of striking parallels and similarities in the formal classificatory structures of several languages began to emerge. These structural regularities were most striking in the area of lexicon, that portion of language which had received the most concerted attention, although similar structural regularities were being uncovered as well in the area of grammar. For example, formal taxonomic structures and nomenclatural principles were found to be quite similar--if not totally identical--in many diverse and unrelated languages of the world. These general features of lexicon represented true universal or near universal characteristics of language and could not be said to merely mirror the ethnoscientifically trained investigators' view of what he imagined lexicon to be like.

It would be inaccurate to suggest, however, that these semantic regularities would have been discovered <u>without</u> the renewed interest in culture as seen from a linguistic point of view. I am firmly convinced that detailed emic descriptions of particular lexical domains led directly to the discovery of general semantic structures which had been igrnored by traditional cultural anthropological methods. Once described, however, the subsequent change of focus from particular emic systems to general semantic processes followed simply as a matter of course.

Nowhere in this change of emphasis from the particular to the general can one detect a directing, well-formulated, theoretical stance. Work in ethnosemantics cannot be said to derive from a clearly understood theory of universal semantics from which individual universals may be deduced. We are clearly still at the stage of indirectly formulating universals that take the form of empirical generalizations. There is no reason why we should feel dismayed by this fact. Joseph Greenberg's comments here on linguistic universals are relevant:

"...it would be embarrassing to deduce a particular universal from what seemed to be a general principle only to discover that the generalization was not empirically valid" (1963:60).

Nonetheless, an underlying theoretical bias does seem to permeate many of the studies growing out of ethnosemantic research in the last several years or so. Such a position states that it is as much concerned with elucidating universal diachronic processes as it is in the establishment of universal synchronic states. That is to say, the aim must not be to discover only those semantic universals which are synchronic-structural in nature. One also must attempt to state those universal diachronic-historical processes which account for the orderly growth of a particular lexical domain.

To review all of the significant literature in this area of research would be inappropriate for such an occasion as this one. However, I do think that at least one illustrative example of empirical research suggestive of the universalist-evolutionary orientation in ethnosemantics should be described briefly, lest this whole presentation become simply another programmatic statement. The example that I have selected is from the work that Kay and I have been conducting over the last several years on color classification--but research now being carried out by numerous other individuals could as easily be included, notably that of Oswald Werner, Paul Friedrich, William Geoghegan, Robbins Burling and J. L. Fischer, to mention a few.

Since my summary of our work can only be sketchy at best, I strongly urge that interested persons consult the original source for a fuller understanding of the arguments outlined here (see Berlin and Kay, in press). Also, for those in the audience who have heard earlier versions, I apologize. New data have been added since we first began the work and a current up-to-date summary of our findings for our colleagues in cultural anthropology, archaeology and physical anthropology is relevant, I think, to the purpose of this symposium.

In the winter of 1967, Kay and I conducted a joint seminar in linguistic anthropology at the University of California at Berkeley. Our selected research topic dealt with what both of us felt to be a widely accepted belief in anthropological linguistics that the classification of color in the languages of the world was totally arbitrary. This relativistic position--which, in many respects, had assumed the status of an anthropological truism, along with such examples as the several different words for snow in Eskimo--did not appear to us to be totally justified in terms of both of our experiences with color classification in several languages of quite unrelated stocks, namely Indo-European, Polynesian and Mayan. The purpose of the seminar was to determine, if possible, the extent to which the linguistic relativity hypothesis concerning human color classification was in fact true.

Our findings indicate strongly that the linguistic relativity argument, at least for this semantic domain, is indeed overstated if not totally false. We found that while different languages may encode different numbers of basic color terms, there nonetheless exists universally a total inventory of just eleven basic color categories from which the color terms of any given language are always drawn. These categories are black, white, red, green, yellow, blue, brown, pink, purple, orange and gray.

A second and equally as interesting finding indicates that the distribution of color terms referring to these eleven basic color categories across languages is not random but can be summarized as an ordered set of equivalence classes. Kay and I believe that this ordering reflects the actual temporal sequence in which color terms come to be encoded in all languages and, as such, has important evolutionary implications as regards

the development of color vocabulary.

Our initial research was limited to collecting data from twenty languages of various linguistic stocks but we now have expanded the data base to more than 100 languages. Data was collected in the first twenty languages in two stages. First, the basic color terms in each language were elicited after having decided upon an operational definition of the notion 'basic color term'. Operationally, any basic color term is an expression which satisfied each of four criteria. These criteria may be stated briefly as follows. A basic color term should be (a) monolexemic, e.g., red, green, in English, as opposed to forms such as reddish, greenish. (b) basic color terms should not be included in any other color terms; thus, scarlet is not considered a basic form in that it is a kind of red. (c) basic color terms should be applicable to a wide range of objects. Thus, blond would be excluded in that it appears limited in application to hair and furniture. (d) Basic terms should be highly salient, easily elicited, appearing at the beginning of elicited lists, etc.

The second part of the research consisted in the mapping of the basic color terms for each of the 20 languages onto a standarized set of Munsell color chips. This set of stimuli was comprised of 320 chips representing 40 hues (ranging from reds to purples) in eight degrees of brightness, all of which were at maximum saturation. In addition, we included nine chips of neutral hue ranging from black with a brightness of 1 through gray to white with a brightness of 9.

The Munsell Company has prepared a color print of these original stimulus materials which you now see before you. It is an exceptionally accurate rendering of the actual stimulus chips. The lower row represents 40 neutral black chips and the upper row represents 40 neutral white chips. To use the terminology of my colleague Kay, the chart can be thought of as a two dimensional mercator-like projection of the three-dimensional color solid, the upper and lower white and black points of the solid being "stretched" across the top and bottom portions of the color chart.

The mapping of each color term was accomplished by asking each native informant to mark with a grease pencil on an acetate overlay: (a) all

of those chips which he would, under any conditions, call by the color term in question and (b) those chips which he felt represented the most typical or 'best examples' of the color term in question. Such queries allowed us and the seminar participants to determine not only the total area of each basic color term but as well the focus of each term. The mapping was conducted several times with each of the 20 languages. In the case of Tzeltal, a Mayan language of Chiapas, Mexico, 40 informants were consulted.

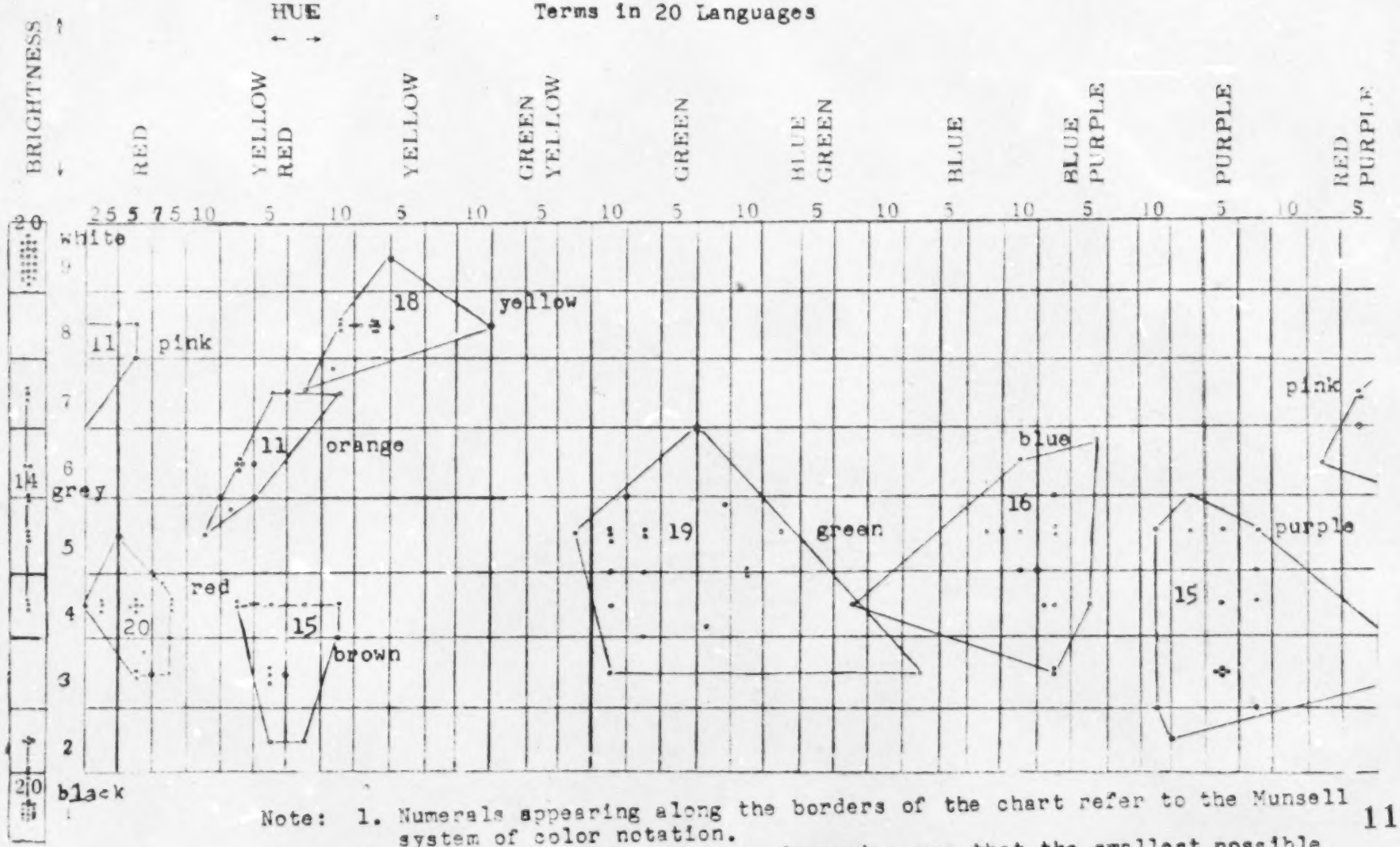
After each language was mapped, we compiled a composite for all languages of the centers, or foci, of all basic color terms. The composite can be seen in the next slide. The distribution of foci from the 20 languages immediately reveals a strikingly similar clustering of focal points around a few selected areas of the spectrum. In fact, there appear to be exactly eleven areas of the color chart which may be potentially selected as the foci of the basic color terms of any given language. More than 70 per cent of the potentially nameable area of the spectrum is never selected as a color category focus. Each of these eleven areas with their associated glosses, e.g., red, black, white, etc., includes foci for the number of languages equal to the corresponding number. Thus, the area 'red', includes the foci for all 20 languages, as do the areas 'white' and 'black'. Orange, on the other hand, is a focal point for only 11 languages in our sample of 20, the remaining 9 languages in the sample lacking a term for this category and so on.

The results shown in Fig. 1 support quite strongly our initial intuitions concerning the universal similarity of human color categorization and cast serious doubt on the traditional linguistic relativity hypothesis concerning the arbitrariness of man's classification of color.

An important result of this finding of universality of color classification is a methodological one. We have now found it possible to

Figure 1

Normalized Foci of Basic Color Terms in 20 Languages



Note:
1. Numerals appearing along the borders of the chart refer to the Munsell system of color notation.
2. The line segments are drawn in such a way that the smallest possible number is used to enclose each area.
3. Numerals appearing on the body of the chart refer to the number of langu in the sample of twenty which encode the corresponding basic color categ

to interpret many of the descriptions of color classification found in the ethnographic literature in a meaningful way and have been able to expand the number of languages for which we have data to approximately 100.

While all languages appear to draw upon a finite set of eleven color categories which may be potentially encoded in language, it is nonetheless true that not all languages have an equal number of basic color terms. Some languages, such as English, have basic color names for each of the eleven color categories. Others, like Tzeltal, have terms for only five of the categories. However, the particular terms that any particular language may have at any particular time in its development is restricted in a precisely specifiable way. We have found in examining the color lexicon of the 100 or more languages in our comparative study the following distributional restraints on basic color terms.

a) All languages have color terms for black and white.

b) If a language has three terms, the terms are black, white and red.

c) If a language has four terms, the terms will be black, white, red and yellow or black, white, red and green.

d) If a language has five terms, it will have terms for black, white, red, green and yellow.

e) If a language has six terms, it will have terms for black, white, red, green, yellow and blue.

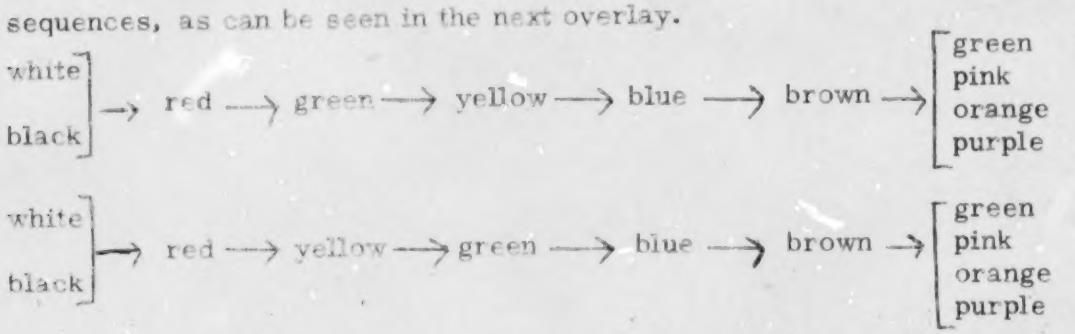
f) If a language has seven terms, it will have terms for black, white, red, green, yellow, blue and brown.

g) If a language has eight or more terms, they will include the foregoing and, in addition, gray, orange, pink and purple.

In a very real sense, if one knows the number of color terms in a language, one can actually predict what those terms will be.

The distributional characteristics of color terms found in the languages of the world at the present time has clear implications for the evolution of color vocabulary. One obvious conclusion is that the

distributional ordering reflects an historical one as well. Thus, one may infer from the synchronic data that there is a fixed sequence of evolutionary states through which any language must pass as its basic color vocabulary becomes expanded over time. There are just two possible evolutionary sequences, as can be seen in the next overlay.



It now appears possible to posit at least seven evolutionary stages in the development of basic color terms.

Stage I in the evolution of lexical color categories is represented by just two terms (i) black plus most dark hues and (ii) white plus most light hues. For convenience, we will write these categories BLACK and WHITE. Stage I is represented in Figure 2. Several languages of Highland New Guinea and Australia exhibit Stage I terminologies, notably the Danian tribes of the Central Valley. Klaus Koch, who has worked among the Jalé of the Central Highlands, reports only two color terms -- roughly glossed as dark and light. The remaining forms for color appear to be derived from words for natural objects. M. Bromley, working also among the Danian languages of the Grand Valley of New Guinea, has published corroborative data to this effect. Bromley's own words here are especially to the point: "In much of the area under study", says Bromley, "there are overlapping color taxonomies, one dividing all colors into two categories, 'brilliant' including most reds, yellow and white, and 'dull', including most greens and black. Widely varying descriptive phrases are used for other specific color terms; recurring examples are 'fresh leaf' for 'green' and cut orchid fibers' for yellow." Bromley concludes by stating, "It would appear that [of] the languages under study several lack basic color terms other than 'brilliant' and 'dull'" (Bromley, 1967:288).

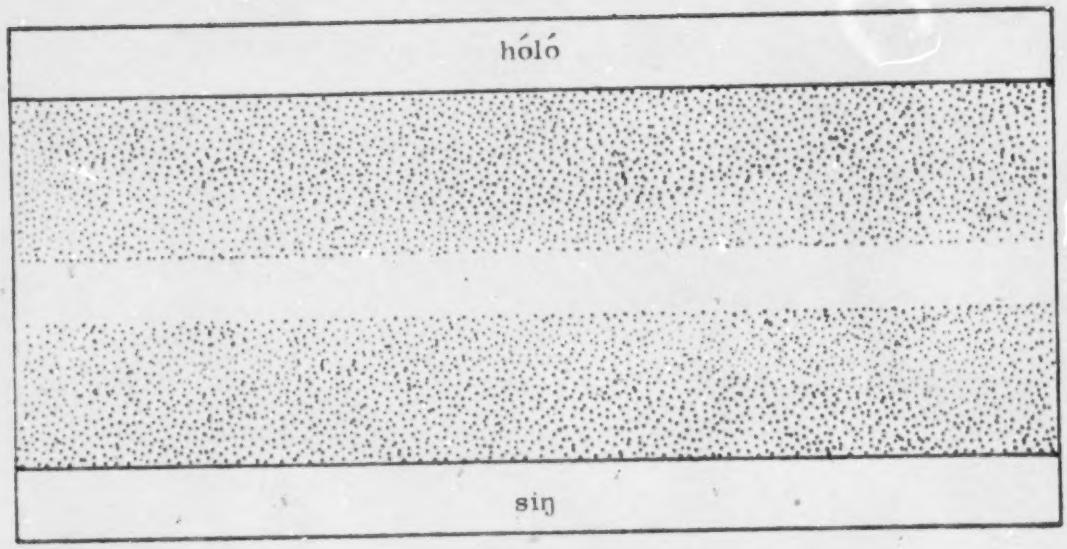


Figure 2

Jalé Basic Color Terms

Representing Stage I

At Stage II, a third category emerges which we call RED. RED includes all reds, oranges, most yellows, browns, pinks, and purples (including violet). WHITE and BLACK continue to segment the middle-range hues. Stage II is represented in Figure 3. We have found Stage II languages in New Guinea and Australia, although a large number are concentrated in Africa, notably the Tiv and Ndembu.

Paul Bohannan, an expert on Tiv ethnography, includes the following report in his text on Social Anthropology: "In Tiv -- all green, some blues and some greys are ii. But very light blues and light grays are pupu. Nyian, which covers brown, also covers all warm colors through red to yellow. The distinction between ii and pupu actually is not in terms of color, but in terms of what we would call shade -- darkness and lightness. Very light blue, gray or white are all pupu. Ii means dark and covers all dark colors and black -- unless there is a warm color present; brown, red and yellow are all nyina. Tiv can distinguish colors and do color blind tests" -- concludes Bohannan -- "but their culture does not require -- or allow that they make some of the color distinctions that Westerns make." (Bohannan, 1963:35-36).

At Stage III, the reduction in area of WHITE and BLACK continues and a new category emerges. This may be either GREEN or YELLOW. GREEN normally includes English yellow-green, greens, blue-greens, blues, and blue-purples; it may, however, include only greens plus yellow-greens and tans or light browns. We designate the addition of the GREEN category at Stage III as Stage IIIa.

Ibibio, a language of Nigeria, exhibits a Stage IIIa color system. (Figure 4) This data is seen in the next chart and was collected by Elaine Kaufman who utilized our experimental procedure. Conklin's classic Hanunóo are a slightly variant representative of Stage IIIa color terminology in that the extension of green is into the light yellows. There are only four basic color terms, which are glossed in Conklin (1955) as follows:

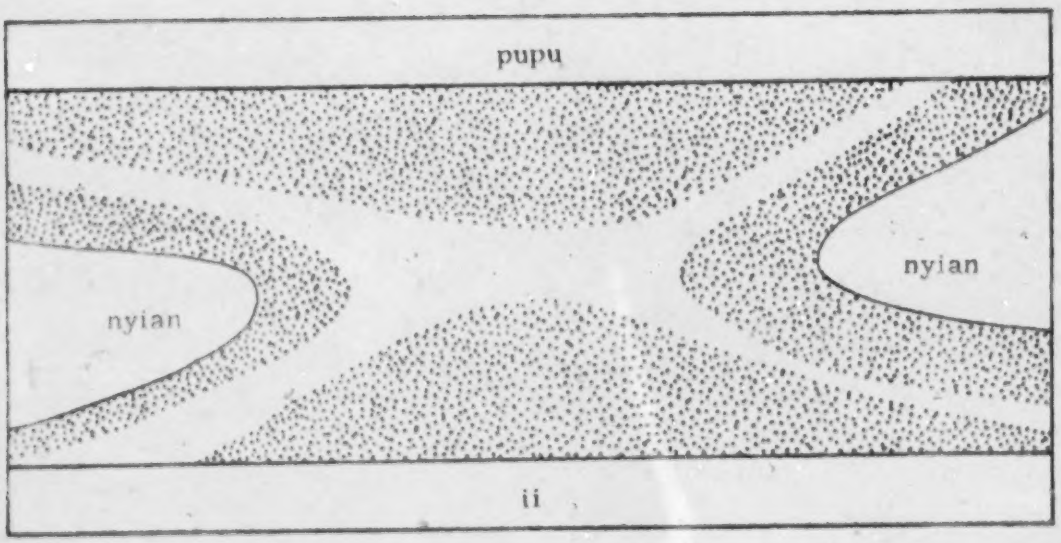


Figure 3

Tiv Basic Color Terms

Representing Stage II

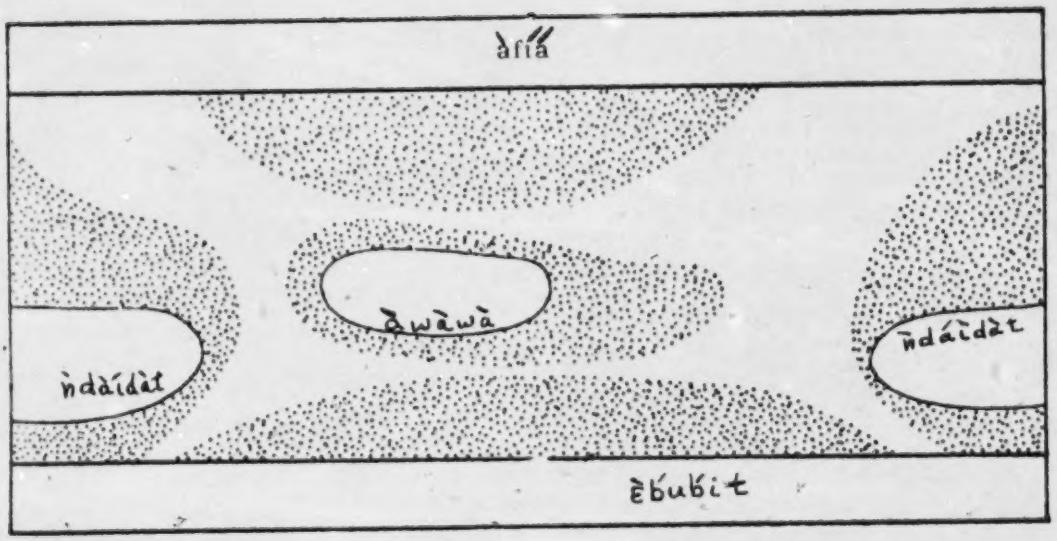


Figure 4

Ibibio Basic Color Terms

Representing Stage IIIa

(ma)lagti?	white, light tinge of other colors (i.e., WHITE)
(ma)biru	black, violet, indigo, blue, dark green, dark gray and deep shades of other colors (BLACK)
(ma)rara?	maroon, red, orange, yellow (RED)
(ma)latuy	light green and mixtures of green, yellow and light brown (GREEN)

There appears to be no question that (ma)latuy means green in that in another place in the article Conklin glosses the form as "relative presence of light greeness, greeness." (1955:190)

If the YELLOW category, rather than the GREEN, is added at Stage III, the extension is always into light greens and light browns or tans. This development is designated Stage IIIb.

There are a number of Stage IIIb systems which show the emergence of YELLOW but green and blue hues are still included in black or designated by obvious descriptive phrases. Ibo is an example of IIIb. The basic color terms are oji BLACK, mzu WHITE, uhuie RED, and odo YELLOW. The term for green hues is agwok wondu, meaning lit. 'has the color of green leaves'. The inferred mapping of the color terms is seen in Figure 5.

At Stage IV whichever of the categories YELLOW or GREEN did not emerge at the previous stage now emerges. Irrespective of the variant of Stage III through which the language has passed, the GREEN term now includes most blues. RED continues to encompass the

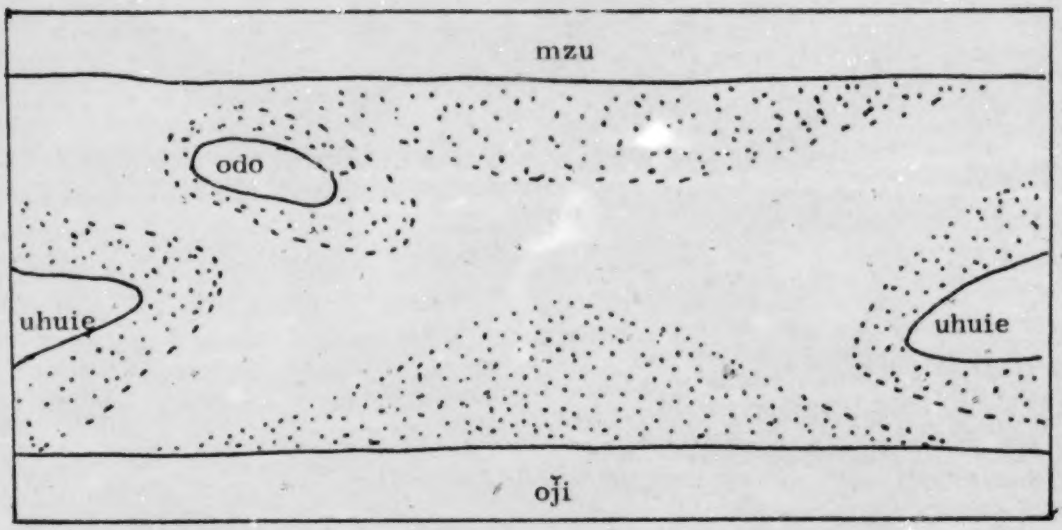


Figure 5

Ibo Basic Color Terms

Representing Stage IIIb

areas of English red, some yellow-reds, purple and purple-reds. Presumably, BLACK and WHITE continue to be deprived of hue reference at this time, becoming increasingly restricted to neutral values. Stage IV is shown in Figure 6. Tzeltal is a typical example of Stage IV.

Tzeltal has just five basic color terms. sak is white and light hues. ?ek' is black and dark hues, especially dark blues and purples. can, is red-yellow reds and includes as well purples and purple-reds. yas is green, i.e., has its major focus in green, but includes as well all blues. k'an is yellow, and for some informants includes oranges. In mapping basic color terms with 40 Tzeltal informants, I found that degree of bilingualism had little or no effect on the actual mappings. I also observed all Tzeltal informants were aware, perceptually of the potential focus of blue, but this was recognized only in the secondary color vocabulary.

At Stage V the focus of blue emerges from the GREEN area. GREEN now becomes green. At this stage, BLACK and WHITE are fully restricted to black and white; i.e., to neutral values. The RED area is probably also reduced with respect to purples and violets. Stage V is depicted in Figure 7. Plains Tamil of South Indian is a typical example of Stage V. Peter M. Gardner (1966) has published the following terms for Plains Tamil: vellai 'white', karuppu 'black', sivappu 'red', paccai 'green', manjal 'yellow' and nilam 'blue'.

Stage VI is the last at which a single focus appears, brown. At Stage VI both RED and YELLOW become even more restricted in area although it is not until Stage VII that they become red and yellow. Stage VI is seen in Figure 8. A typical example of Stage VI is Malayalam (India). Goodman (1963) has published a Stage VI system for Malayalam. The relevant terms are vella 'white', kaḍup 'black', cuwappa 'red', paccā 'green', mannā 'yellow', nilā 'blue', tavita 'brown'.

Apparently, at Stage VII, the remaining basic categories purple, pink, orange and gray are added to the lexicon very rapidly and, as

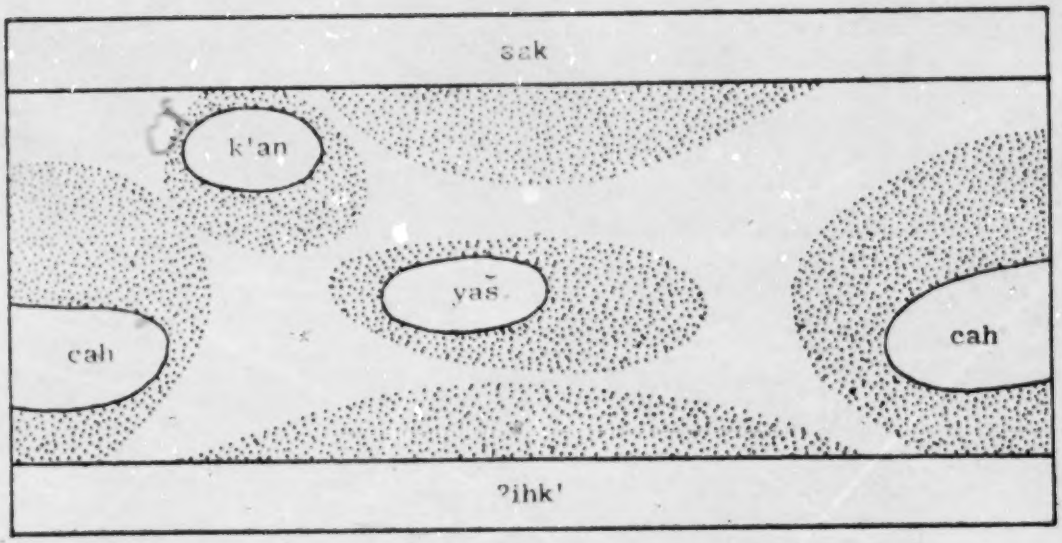


Figure 6

Tzeltal Basic Color Terms

Representing Stage IV

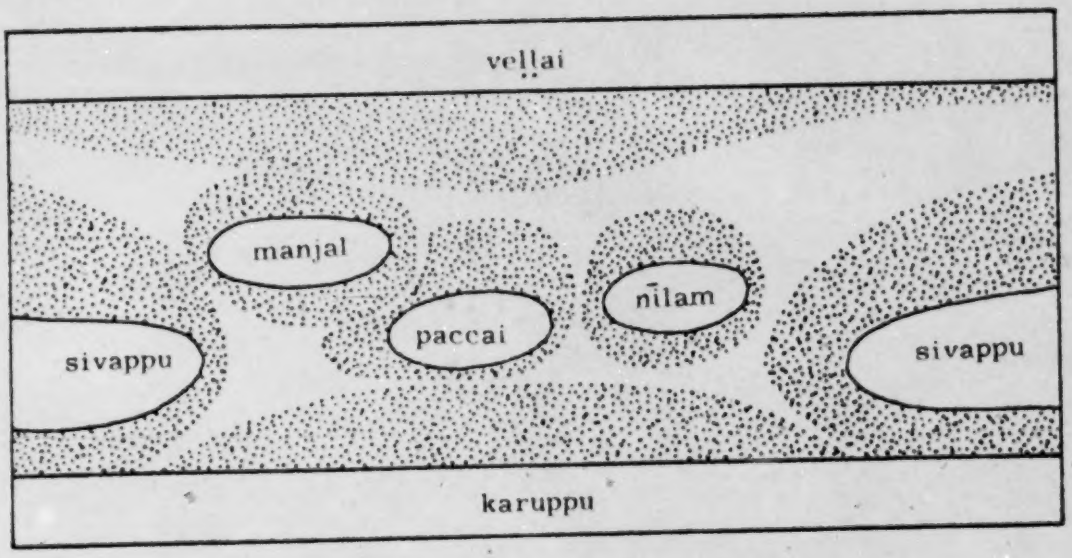


Figure 7

Plains Tamil Basic Color Terms

Representing Stage V

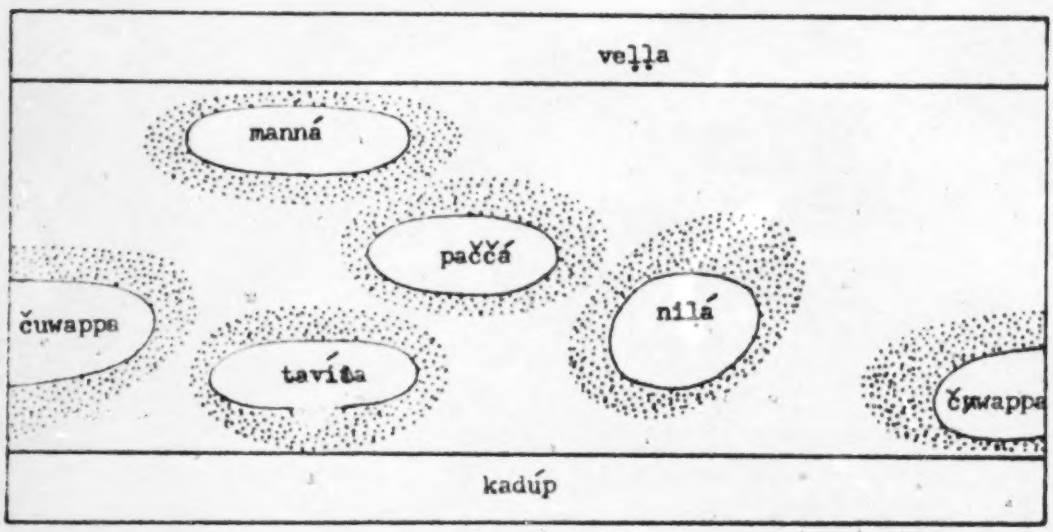


Figure 8

Malayalam Basic Color Terms

Representing Stage VI

far as we have been able to determine, in no particular order. Our data suggest that purple and pink probably arise from RED while orange becomes isolated from YELLOW. Occasionally, purple may arise from BLACK. There is some evidence to indicate that orange may have, in some cases, arisen from RED. Gray represents simply the encoding of mid-brightness neutral hues between black and white. (Stage VII, Fig. 9)

To summarize to this point, at least seven stages may be recognized in the evolution of basic color terms. These stages and their basic color terms, are as follows:

Stage I	BLACK, WHITE	(two terms)
Stage II	BLACK, WHITE, RED	(three terms)
Stage IIIa	BLACK, WHITE, RED, GREEN (extending into blues)	(four terms)
Stage IIIb	BLACK, WHITE, RED, YELLOW	(four terms)
Stage IV	BLACK, WHITE, RED, GREEN, and YELLOW	(five terms)
Stage V	black, white, RED, green, YELLOW, blue	(six terms)
Stage VI	black, white, RED, green, YELLOW, blue, brown	(seven terms)
Stage VII	black, white, red, green, yellow, blue, brown, purple, pink, orange, gray	(eight, nine, ten or eleven terms)

Consonant with our suggestion that color lexicon evolves in a specifiable order is the additional observation that languages which possess few basic color terms -- as can be seen from the examples just cited -- are invariably spoken by peoples which exhibit relatively primitive levels of economic and technological development. On the other hand, languages possessing rather full color lexicons are

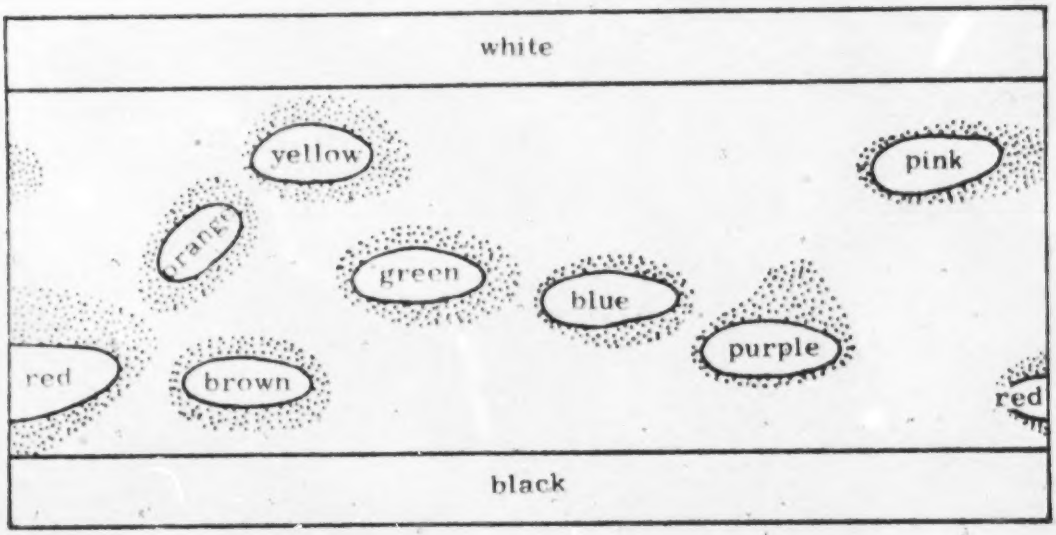


Figure 9

English Basic Color Terms

Representing Stage 7

* The eleventh category, grey, cannot be depicted on the above diagram.

characteristically spoken by the more civilized nations of the world. There is no reason to assume that languages with few color terms represent degenerate systems, for such groups appear in every continent of the earth and have quite varied individual culture histories. On the contrary, the most logical assumption to make is that these simple systems accurately reflect the first stages of abstract color naming as must have been characteristic of early man. From an evolutionary point of view concerned with environmental adaptation, quite plausible arguments can be made to the effect that abstract color terms are, in effect, relatively useless concepts in societies living close to nature and that numerous, highly specific and concrete terms denoting fine shades of meaning are much more important to encode linguistically for such groups. Tentative evidence suggests that this is in fact the case as several of the languages exhibiting early stages of basic color lexicon have incredibly complex non-basic or secondary color vocabulary.

I do not think that the discovery of synchronic and diachronic semantic universals will be limited to color lexicon. In another symposium of these meetings, (Berlin, n.d.) I have suggested that one may be able to describe universal principles of nomenclature in man's linguistic designation of his ethnobiological universe, namely the names that he gives to plants and animals. These universals, likewise, do not appear to be restricted to synchronic statements, but there may be as well far-reaching generalizations to be made concerning the temporal development of ethnobiological nomenclature. As with color lexicon, the underlying process appears to be one of continual enrichment of plant and animal vocabulary over time, and that languages which lack or have few higher order abstract terms for major life forms of organisms, as 'tree', 'vine', 'flying animal',

are also languages spoken by societies of rudimentary technological development. The adaptive mechanisms involved as yet are poorly understood, but it is likely that the relationship of concrete highly specific ethnobiological vocabulary is also a reflection of primitive societies' needs for a direct and maximally efficient means of talking about the natural environment.

The discovery of semantic universals in the area of the color lexicon and those suggested for the ethnobiological lexicons of all languages, reflecting both synchronic states and diachronic processes, poses several challenges for cultural anthropological theory in the next decade. Two closely related and fundamental problems, I think, are raised. A synchronic issue concerns that notion of linguistic relativity; a diachronic issue focuses on the orderly growth of lexicon as a special case of the evolution of language.

The systematic study of the evolution of vocabulary has received little attention from American linguists and anthropologists of this century. The attention that it has received has resulted, for the most part, in rather negative evaluations, the whole topic being relegated to a minor role in the study of language change. In fact, the suggestion that vocabulary may develop in an orderly fashion amenable to linguistic analysis has been considered to be not only trivial but also a return of the late 19th and early 20th century evolutionary views which, until recently, have been tabooed as legitimate topics of inquiry. For many anthropologists, the linguistic relativity hypothesis inherited from Sapir and Whorf has caused no small amount of ambiguity in their basic theoretical positions as concerns the connections that exist between language and culture. Such ambiguity has been explicitly indicated by Abraham Kaplan who notes, in discussing the 1953 Conference on Language in Culture, that the participants had no problem in discussing 'primitive cultures' but that "...everyone apparently [was] quite

unwilling to talk about the primitiveness of language ..." (1954:219). A more recent recognition of this basic ambiguity can be seen in a comment by L. F. Watson, who asks in a question to the cultural ecologist, Harris, "...do we not often find ourselves giving a double-barreled response to laymens' suppositions about 'primitive' languages? In terms of what linguists are mainly concerned with, there is no such thing as 'primitive'..." (Watson, 1968:529). One will often hear, however, a second part of the statement: "On the other hand, there may be 'primitive cultures', as can be seen in terms of certain features of technological and economic development." "Surely," Watson continues, "no anthropologist [can] neglect to give at least equal emphasis to the first part of the statement" (Watson 1968:529).

There is no question, however, that modern anthropologists have neglected to concern themselves with the relations of language and culture as may be seen from an evolutionary or developmental point of view. The very notable, but no less isolated exceptions are Dell Hymes, the late Morris Swadesh, and recently, Mary LeCron Foster. Almost a decade ago, Hymes, in a courageous but unfortunately little read or appreciated article titled "Functions of Speech: An Evolutionary Approach", argued for a renewed interest in the evolution of language. His opening sentences are particularly relevant: Hymes stated "I want to controvert two widely accepted views, first, that all languages are functionally equivalent, and second, that all languages are evolutionarily on a par. I want to maintain that the role of speech is not the same in every society and that the differences can best be understood from an evolutionary point of view; that we must understand speech habits as functionally varying in their adaptation to particular social and natural environments, and recognize that there are ways in which some languages are evolutionarily more advanced than others" (Hymes 1961:55). I am convinced that the time is now ripe for proceeding with the necessary empirical research for Hymes' suggestions to be realized.

The most fully developed set of ideas viewing language in an evolutionary perspective are associated with the late Morris Swadesh. Swadesh's truely untimely death will be marked as one of the most critical losses of this period. His book, Origin and Diversification of Languages (in press) was nearly completed at his death and I understand is likely to be available soon. When it is available, it is certain to have a major influence on evolutionary theory and will point the ways (as did many of his original notions, notably lexicostatistics) toward new insights into the nature of the development of language.

Finally, Mary LeCron Foster's work on primoridal language (Foster, n.d.) reconstruction at time levels well beyond those reached by more traditional methods of linguistic comparison indicates clearly that one can approach the problem of language evolution in a theoretically illuminated and sophisticated fashion.

One may realistically predict that the decade of the 60s will mark a turning point in the extremely relativistic attitudes of American anthropology and linguistics as concerns the study of the processes involved in the orderly development of culture and language. Already the change can be observed in cultural anthropology proper, most immediately due to the influence of the recent work in American cultural ecology as practiced by Rappaport, Moerman, Netting, Carneiro, Vayda, Leeds and Harris, to name the most influential. Ironically, it is precisely in the area of man's relation to nature that I think Hymes' neglected call for viewing language in an evolutionary perspective offers exciting promise as a common meeting ground for cognitively oriented anthropologists and those who argue for a more sophisticated understanding of man in terms of the influences of the material world. Language must certainly be seen as at least one kind of cultural behavior, and it is reasonable to assume that aspects of man's adaptation to his natural world will be reflected directly in language. As such, man's linguistic classification of the environment cannot be ignored in research which

seriously claims to illuminate cultural ecological processes.

When one finally looks at language as an adaptive mechanism, there is every reason to suspect, as I in fact do, that one will eventually be able to make non-obvious and non-trivial generalizations about the lexical and grammatical structure of languages spoken by primitive peoples which can be interpreted within a cultural materialistic theoretical framework. The early evolutionists were not totally wrong when they attempted to relate -- too simple mindedly, to be sure -- cultural development and language structure. Sadly, we as linguistic anthropologists have been taught to treat the grain of truth in such observations as an embarrassment to be forgotten as quickly as possible. Stephen Ullman, writing on this very subject back in the 1961 Language Universals conference summarized this view in an important suggestion: "In view of the great importance of the problem to linguists and anthropologists alike, it would be most desirable to organize a large-scale research project on the whole question of relations between vocabulary and culture, with special reference to the use of particular and generic terms at different levels of civilization and in different environments. Needless to say, the results of such an inquiry would be of direct relevance to the Sapir-Whorf hypothesis and would throw valuable light on the influence of language upon thought" (Ullman 1961:230).

As suggested above, I am convinced that a likely place to begin ones' search for semantic universals which may reflect man's socio-technological development is precisely in the area of man's classification of his natural universe. Hence, I personally consider semantic studies of such domains as ethnobotany, ethnozoology, ethnogeography, and the like as representing important research priorities. Here, for once, is a plausible and theoretically significant reason for becoming involved in urgent ethnographic work among vanishing peoples whose appreciation of the natural world comes close to that of man in earliest times.

A genuinely semantic universalist view of language should also move anthropology closer to theoretical linguistics. The firm data base available to linguistic anthropology will allow ultimately, if not in the next decade, for a kind of rapproachement between linguistic anthropologists and the younger generative grammarians, or better said, the semantic grammarians, in a truely intellectually collaborative way that was not possible with at least some of the advocates of orthodox generative grammar who relegated semantic studies to a minor role in linguistic theory. No semantic theory emanating from linguistics can placidly ignore, in the exciting years ahead, the empirical findings provided from a universalist-semantically directed research in anthropology. Hopefully, as such studies continue to become available, they will further illuminate questions bearing on one of man's most important preoccupations: the nature of language. More importantly, there are many indications that they will contribute to our understanding of the nature of language as it is a reflection of man's continual adaptation to the world in which he lives.

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